

Patent claims

1. A valve seat for a cylinder head of an internal combustion engine, which includes an additional material fused to the base material of the cylinder head, characterized in that the additional material includes at least two layers (6, 7) above one another, the inner layer (6), facing the cylinder head (1), having good joining properties with respect to the base material of the cylinder head (1), and the outer layer (7), remote from the cylinder head (1), having good strength and wear properties.
2. The valve seat as claimed in claim 1, characterized in that the inner layer (6) has good heat conduction properties.
3. The valve seat as claimed in claim 1 or 2, characterized in that the inner layer (6) includes copper or a copper alloy.
4. The valve seat as claimed in claim 3, characterized in that the copper alloy includes aluminum as an alloying constituent.
5. The valve seat as claimed in claim 3 or 4, characterized in that the copper alloy includes iron as an alloying constituent.
6. The valve seat as claimed in one of claims 1 to 5, characterized in that the outer layer (7) includes nickel, iron and/or cobalt or an alloy comprising at least one of these materials.

7. The valve seat as claimed in claim 6, characterized in that the nickel, iron and/or cobalt alloy includes chromium as an alloying constituent.

8. The valve seat as claimed in claim 6 or 7, characterized in that the nickel, iron and/or cobalt alloy includes silicon as an alloying constituent.

9. The valve seat as claimed in claim 6, 7 or 8, characterized in that the nickel, iron and/or cobalt alloy includes molybdenum as an alloying constituent.

10. A process for producing a valve seat for a cylinder head of an internal combustion engine as claimed in one of claims 1 to 9, in which the additional material is fused to the cylinder head at the location at which the valve seat is to be formed by the introduction of energy, characterized in that, after the inner layer (6) has been fused to the base material of the cylinder head (1), the outer layer (7) is fused to the inner layer (6) by the introduction of energy.

11. The process as claimed in claim 10, characterized in that the additional material is fused to the cylinder head (1) by means of a laser beam (9, 9').

12. The process as claimed in claim 10, characterized in that the additional material is fused to the cylinder head (1) by means of an electron beam.

13. The process as claimed in claim 10, 11 or 12, characterized in that the inner layer (6) is placed onto the cylinder head (1) in the form of a solid ring, and in that the

outer layer (7) is applied to the inner layer (6) in powder form.

14. The process as claimed in claim 10, 11 or 12, characterized in that the inner layer (6) and the outer layer (7) are applied in powder form.

15. The process as claimed in claim 10, 11 or 12, characterized in that the inner layer (6) and the outer layer (7) are applied in the form of a solid ring.